Study on engaging indigenous peoples more inclusively in the disaster risk reduction process[1]

Summary

Indigenous peoples have suffered from the imposition of development models that have devastated their communities, and these communities are now at risk. While it is common to see indigenous leaders plan and anticipate ways to take advantage of the opportunities made possible by the assets and the dynamic energy of a community, it is less often that they seriously consider potential risks.

The present study is intended to stimulate discussion and act as a catalyst for creating opportunities for sharing experiences and knowledge about disaster risk reduction among indigenous peoples and their communities in nations throughout the world. It should also serve to generate debate, raise questions and find solutions that a-6(ade pw 17.159pl)3l roc

I. Introduction

1. Recently, two urban Native American focus groups in Seattle, Washington State, United States of America, were asked to offer feedback on public health practices surrounding the influenza A (H1N1) crisis. Responders expressed confusion with regard to different public health messages about the severity of the problem and the safety of the vaccine being offered. The lack of a clear and authoritative message reinforced an already historical distrust of public officials, causing those involved in the two focus groups to question whether the advice being offered was valid. The sheer number of messages from different sources, each asking that their views be seen as correct, exacerbated the confusion and prevented some from seeking the vaccine.[2] This limited assessment raises questions about the importance of early warning messaging and its value to indigenous peoples and their communities, which must not be overlooked in times of real crisis, including disasters and public health emergencies.

2. Indigenous peoples, who comprise an estimated 370 million in some 90 countries throughout the world,[3] face systematic discrimination and exclusion from political and economic power and continue to be overrepresented among the poorest and illiterate sectors of society. Indigenous peoples are often dispossessed of their ancestral lands and deprived of their resources for survival, both physical and cultural, further weakening their capacity to deal with hazards, both natural and man-made.

3. However, literacy and language, important as they are, are only one aspect of risk reduction activities within indigenous peoples' communities. With respect to disaster preparedness, mitigation, prevention and longer term risk reduction objectives, community leaders and disaster managers may have an opportunity to take advantage of local time-tested practices, drawn from the close relationship of indigenous peoples with the environment, their cultural beliefs and the pool of common sense within the community, by including these biases in their planning. Ideally, bridge-building of this kind would take place in collaboration with respected community leaders through participatory capacity assessment and horizontal planning rather than imposed top-down processes. Communities must be involved in outlining their own disaster risk reduction strategies.[4] It is important to respect the culture of affected communities because effective means of successful disaster risk reduction planning cannot be built without engaging the people themselves and ensuring that the strategies agreed upon remain their own.[5]

4. Understanding different cultural beliefs and ways of life within communities, in particular within indigenous communities, which filter mainstream messages through their own historical context, is a key factor to success for community leaders and disaster professionals working to reduce the impact of natural hazards.

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[2] R. Forquera, Seattle Indian Health Board, personal communication, 12 October 2010.

[3] http://www.un.org/esa/socdev/unpfii/documents/SOWIP_web.pdf, accessed on 6/12/2012.

[4] Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, the wise management of land and the environment and improved preparedness for adverse events.

[5] Instítuto de Investigación y Desarrollo, Centro para la Autonomia y Desarrollo de los pueblos Indígenas, CADPI, *Cambio climático*: *medidas de adaptación en comunidades de las Regiones Autónomas de la Costa Caribe de Nicaragua,* febrero 2010.

5. Assessments of indigenous communities must not be limited to attempts to understand how outside messages and practices are perceived and responded to however — local capacities, resources and knowledge must be appraised and capitalized on. For example, during the Indian Ocean tsunami of 2004, the indigenous inhabitants of Simeulue Island, Indonesia, managed to survive the catastrophe in spite of being only 40 kilometres from the epicentre of the earthquake. While the tsunami killed well over 200,000 people in the rest of Indonesia, only seven of the 78,000 members of the community died during the disaster.[6]

6. Barely 10 minutes after the earthquake, waves 10 metres high hit the island. In that scenario, when even a high-technology early warning system with a 15-minute response time would have been useless,[7] the knowledge, passed from generation to generation, that buffaloes run to the hills when a tsunami is coming was effective.[8] In another case, inhabitants of the Damodar River in West Bengal, India, used markers inscribed on trees and the observation of ants moving their eggs to higher ground as a warning against floods.[9]

7. For millennia, local capacity, practices, knowledge and traditions have helped indigenous peoples, who have developed a close relationship with their natural environment, to cope with hazards and thrive in highly at risk areas. In many cases, however, the loss of such practices due to social, political or economical changes have increased the vulnerability of such populations, and this problem has increased with the advance of climate change. There is clearly a need to research and document traditional risk reduction and mitigation practices (wit)-6(mitig)]TJ0cnhetocumenhation 6802 163.02

organizations in their efforts to reduce losses stemming from natural hazards. The Framework is comprehensive and addresses the roles of States and regional and international organizations, calling on civil society, academia, volunteer organizations and the private sector to combine efforts to promote disaster reduction, including through the decentralization of authority and the provision of resources to promote action at the local level. The Framework thus presents an opportunity to include local indigenous governments and institutions.

14. The Hyogo Framework is intended to promote action to substantively reduce disaster losses, including loss of life and loss of the social, economic and environmental assets of communities and countries. The five priorities for action are:

(a) Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation;

(b) Identify, assess and monitor disaster risks and enhance early warning;

(c) Use knowledge, innovation and education to build a culture of safety and resilience at all levels;

(d) Reduce the underlying risk factors;

(e) Strengthen disaster preparedness for effective response at all levels.

15. The United Nations Office for Disaster Risk Reduction (UNISDR) acts as the focal point within the United Nations system for the coordination of disaster risk reduction in order to ensure synergies among disaster risk reduction activities. The Office leads inter-agency country-specific and thematic discussions and contributes to the development of United Nations programming tools, such as guidelines on risk reduction.

16. The first session of the Global Platform for Disaster Risk Reduction took place in 2007, and since then, the Office has held the event every two years. The Global Platform is a forum for information exchange, discussion of the latest developments and knowledge and partnership-building across sectors, with the goal of improving implementation of disaster risk reduction efforts through better communication and coordination among stakeholders. It offers the opportunity for Government representatives, non-governmental organizations, scientists, practitioners and United Nations organizations to share experiences and formulate strategic guidance and advice towards the implementation of the Hyogo Framework for Action. As the end date for implementation of the Framework approaches in 2015, the fourth session of the Global Platform, scheduled for May 2013, provides a unique opportunity to focus on issues related to indigenous peoples and disaster risk reduction. A series of online dialogues (see www.preventionweb.net/posthfa/dialogue) is currently under way, involving a wide range of stakeholders in the consultative process towards a post-2015 framework for disaster risk reduction.

17. Until recently, global focus on indigenous peoples' concerns, including efforts within the Hyogo Framework for Action, has been limited. It is important to take advantage of the present momentum and to ensure that indigenous peoples and their communities have access to best practices and lessons learned through the work of UNISDR and others, and that the experience and valuable knowledge of indigenous peoples' communities is shared with and recognized by the international community.

III. Understanding disaster risk

18. Populations in many parts of the world face the threat of disaster on a daily basis. Disaster risk varies by geographical region and by the natural hazards to which an area or a population is exposed, for example earthquakes, floods, cyclones, typhoons, hurricanes, volcanoes, drought, frost, hail and heavy snow, all of which have long been a concern of countries worldwide. Some of the factors that play a definitive role in disaster risk are well known to local authorities and are the target of risk reduction measures, while knowledge about others is still emerging and is the subject of increased research and advocacy efforts.

19. In its 2009 *Global Assessment Report on Disaster Risk Reduction*, UNISDR mentions three major factors discussed below, that individually and in combination drive disaster risk efforts, especially in impoverished communities.

A. Vulnerable livelihoods

20. The livelihoods of many rural people still depend on agriculture and on natural resources, and their access to subsistence necessities, including land, labour, fertilizers, irrigation facilities, infrastructure and financial services, is often heavily constrained.

21. Disaster losses affect huge numbers of people in poor rural areas, where traditional patterns of land distribution and tenure tend to discriminate against them. Often times they may only have access to marginal and unproductive land that is prone to flooding or that receives erratic or minimal rainfall. In many cases, and for various reasons, historical and economic, indigenous communities have often been relocated to such areas.

22. Rural livelihoods that depend on agriculture and other natural resources are vulnerable to even slight variations in weather and are thus particularly sensitive to climate change, which may lead to even lower agricultural productivity. Inadequate infrastructure, including housing, schools and other public buildings, which is too often a fact of rural life, is easily damaged in disasters. For example, the collapse of heavy earth walls led to the destruction of 329,579 houses in the 2005 Kashmir earthquake, while the lack of protection offered by wattle and daub and thatch houses contributed to the deaths of 140,000 people in the cyclone that hit Myanmar in 2008.

B. Ecosystem decline

23. The preservation of ecosystems and the resources they provide is essential for the survival of the planet. Worryingly, the exploitation of ecosystem resources is increasing at the same time as their finite supply is diminishing. People have modified ecosystems to increase the output of certain commodities, but such exploitation has led to unregulated behaviour, for example, the deforestation for agricultural purposes and the destruction of mangroves to create shrimp ponds. While such changes in the distribution of ecosystem commodities benefit specific commercial interests, the costs are often borne by poor urban and rural households and indigenous communities that have little input into decision-making and derive little benefit from the commercial activities.

24. In Peru for example, the opening of new roads down the eastern slopes of the Andes into the agricultural frontier has led to a marked increase in the number of reported landslides in that region since the 1980s.

infrastructure, for example, in maintaining drains, exacerbates the problem. In fact, many floods are caused as much by deficient or non-existent drainage, as by the intensity of rainfall itself. Like other groups struggling to make ends meet, indigenous communities undergo increased hardship as individuals and families migrate to cities in increasing numbers, looking for work, often ending up in already vulnerable neighbourhoods.

D. What can indigenous peoples expect from engaging in disaster risk reduction?

30. The implementation of effective disaster risk reduction strategies can make communities healthier, better educated, economically stronger, more reliable trading partners and more resilient to the effects of climate change over time.

31. Communities that proactively seek to reduce disaster risk as part of their sustainable development efforts can save lives and property in the event of disasters, with a dramatic reduction in fatalities and serious injuries. They may also benefit by:[15]

(a) Protected development gains and less diversion of resources to disaster response and recovery;

(b) Active citizen participation and local democracy;

(c) Increased investment in housing and other properties, in anticipation of fewer disaster losses;

(d) Increased investments in infrastructure, including retrofitting, renovation and renewal;

(e) Economic growth and employment;

(f) Balanced ecosystems, that foster provisioning and cultural ecosystem services such as fresh water and recreation;

(g) Overall better health and well-being;

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33. For indigenous community leaders, reducing disaster risk can be a legacy opportunity — an opportunity to improve social, cultural and economic conditions and leave communities more prosperous and secure.

F. Disaster risk reduction and sustainable development

34. Disaster risk reduction is an integral part of sustainable development and of making communities resilient to disasters. A UNISDR handbook[16] points to social and environmental factors that help local government leaders to achieve resilience:

(a) Social factors:

(i) Guarantee access to basic services for all and provide post-disaster safety nets;

(ii) Allocate safe land for all strategic activities and housing;

(iii) Encourage multi-stakeholder participation in all stages and strengthen social alliances and networking;

(b) Environmental factors:

(i) Protect, restore and enhance ecosystems, watersheds, unstable slopes and coastal areas;

(ii) Engage in ecosystem-based risk management;

(iii) Commit to reducing contamination, improving waste management and reducing greenhouse gas emissions.

35. In light of these factors, a policy note[11] was produced as part of the indigenous knowledge workshop that took place in July 2008 at Kyoto University, Japan, to provide steps for mainstreaming indigenous knowledge into disaster risk reduction. The note proposed a seven-step path:

(a) The establishment of a resource group;

(b) Systematic documentation and research to establish guidelines and create a validated body of applicable knowledge — a database of indigenous knowledge practices is essential;

(c) Incorporation into formal and informal education;

(d) Engaging in policy advocacy;

(e) Enabling an environment that cuts across the techno-legal, socioeconomic and cultural regimes and permeates different areas of work;

(f) Identification of the right change agents (i.e. local leaders, lawmakers and administrators);

(g) Creation of special focus areas such as gender, urban risk, climate change adaptation and food security.

36. Throughout the process of mainstreaming indigenous knowledge into the disaster risk reduction process, it is important to consider cultural aspects and the role of indigenous peoples' organizations, including traditional indigenous governments.

G. The 10 essentials for disaster resilience

37. To help local government leaders take steps to reduce their exposure to disaster risk, UNISDR has developed a 10-point checklist.[17] The 10 points are in line with the five priorities of the Hyogo Framework for Action 2005-2015 and most, if not all of the suggested steps can be used by indigenous peoples to improve their disaster resilience profile (see suggestions in bold after each essential point). The 10 points, as outlined by UNISDR, are:

(a) Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role in disaster risk reduction and preparedness. **Respect the institutions and organizations of indigenous peoples' when building alliances and promoting coordination**;

(b) Assign a budget for disaster risk reduction and provide incentives for homeowners, low-income families, communities, businesses and the public sector to invest in reducing the risks they face. **Design culturally appropriate incentives for indigenous communities and individuals and collective incentives**;

(c) Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for a city's resilience are readily available to the public and fully discussed with them. **Disaggregate data by sex and ethnicity. Ensure that plans are prepared in different languages and disseminated using traditional means of communication. Include non-traditional and cultural concerns in risk assessments**;

(d) Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change. **Consider indigenous peoples' traditional infrastructure measures for risk reduction**;

(e) Assess the safety of all schools and health facilities and upgrade these as necessary;

(f) Apply and enforce realistic, risk compliant building regulations and land-use planning principles. Identify safe land for low-income citizens and upgrade informal settlements, wherever feasible. **Take into account indigenous peoples' land-use practices**;

(g) Ensure that education programmes and training on disaster risk reduction are in place in schools and local communities. **Take local languages into account. Involve indigenous leadership. Make full use of local indigenous institutions**;

(h) Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by

[17] UNISDR, "The 10 Essentials for Making Cities Resilient" (http://www.unisdr.org/campaign/resilientcities/toolkit/essentials).

building on good risk reduction practices. **Climate adaptation plans and measures should utilize sources of traditional knowledge**;

(i) Install early warning systems and emergency management capacities in the city and hold regular public preparedness drills. **Warning systems should integrate traditional practices**;

(j) After any disaster, ensure that the needs of the survivors are placed at the centre of reconstruction, with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods. **Take into account traditional spiritual healing systems, traditional medicinal practices and similar traditional knowledge.**

38. As indigenous peoples seek to strengthen their resilience to disasters, it is important to consider the existing human resources and undertake an intercultural approach to implementing these steps, ensuring the participation of indigenous peoples throughout the process.

IV. Using indigenous knowledge to reduce disaster risk

A. What is indigenous knowledge?

39. Knowledge is not a static concept. It is created, discarded and improved upon all the time, through experience, interaction with our surroundings and through formal and informal education. Indigenous knowledge includes an understanding of the relationships between indigenous societies and nature, which have been tested by time and proven to be sustainable and successful in limiting the effects of hazards. This knowledge is often internalized within indigenous communities and has become part of their culture, although sometimes this is not evident to outsiders or even to the communities themselves.[10] This may be part of the challenge faced by policymakers in incorporating such practices into mainstream disaster risk reduction efforts through participative processes.

40. It can be difficult to draw a clear line between local and outside knowledge. Practices adapted from contact with exterior sources, if culturally integrated and tested over time, become indigenous in practice. In fact, the two most important

disaster risk reduction strategies. Furthermore, social, political, economic and cultural changes stemming from colonialism and globalization have led to the loss of indigenous knowledge and increased vulnerability in this area. In some small island developing States the change from subsistence farming to cash cropping, for example in Papua New Guinea and Vanuatu, has led to extensive land erosion, which has intensified the destruction caused by floods and landslides. In such instances, land may be cleared to make way for larger plantations, and stabilizing vegetation previously protected under indigenous law has been reviewed.[12] Moreover, broader access to formal education and exposure to other models, standards and values can lead to a breakdown of traditional communication networks, including the undermining of the importance of elders within society, as a result of which their knowledge dies with them.

42. Nonetheless, the value of indigenous knowledge for disaster risk reduction is increasingly being recognized in mainstream academia and research institutions, and in concrete policies through, for example, the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore established by the World Intellectual Property Organization in 2000.

B. Integrating modern science and indigenous knowledge

43. It is important to establish a balance between modern science and indigenous knowledge in order to reduce the risks and vulnerabilities such communities are exposed to. While clearly it is useful to take advantage of the scientific and technological tools available, their use must be carefully articulated, the capacities and resources available locally must be recognized and valued, and cultural imposition must be avoided.

44. The relationship between indigenous knowledge and the input of such knowledge on disaster risk reduction efforts is based on the close contact of indigenous peoples with their environment; indigenous communities have learned to read the signs in the sea, the rain, the wind, clouds, vegetation and wildlife to predict hazards. Traditional weather forecasting, which is used in agricultural planning, for example, includes the observation of the moon, the sun, the stars, animals and insects.

45. Direct experience with recurrent disasters has taught indigenous peoples and their communities about the duration, location, time, frequency, intensity and predictability of such events. The beginning and possible behaviour of a given hazard, such as the velocity of water flows or levels of rain, are learned from experience and transmitted from one generation to the next. These local, experiential, early warning systems are frequently credited with saving lives and property.

46. To successfully incorporate indigenous knowledge into disaster risk reduction policies, the compatibility of this set of practices with modern scientific methods, and the advantages of such a combination, must be acknowledged. The incorporation of such knowledge has already taken place in many traditional societies in the Asia-Pacific region. In December 2002, limited access to radio warning systems was complemented by oral dissemination and local coping strategies during the December 2002 cyclone in Solomon Islands, for example,[18]

[18] Anderson-Berry, L., Iroi, C., and Rangi, A., “The Environmental and Societal Impacts of Cyclone Zoe and the Effectiveness of the Tropical Cyclone Warning Systems in Tikopia and Anuta”, report for the Centre for Disaster Studies, James Cook University, Cairns, Australia, 2003.

and the same system has been used in Miskitu indigenous communities living on the Caribbean coast of Nicaragua.

47. Formerly undervalued and ignored, the traditional knowledge and practices of indigenous peoples are now considered to be important and necessary contributions to the conservation of biodiversity, cultural and spiritual practices.[19] Yet this knowledge is under severe threat of being eroded, lost or misappropriated, a factor contributing to greater vulnerability, as demonstrated by the increasing levels of losses stemming from natural disasters in recent decades.[5] The Permanent Forum on Indigenous Issues cites several reasons for this:[19]

(a) Dispossession or forced removal from traditional lands and sacred sites has eroded the relationship between indigenous peoples and their environment. When forced to migrate and resettle in new environments, indigenous peoples find that their traditional knowledge and practices have to be adapted to new and often difficult circumstances;

(b) Traditional knowledge may sometimes be lost as the result of language extinction. Since the traditional knowledge accumulated by indigenous peoples is contained in languages that often have no script, this knowledge is passed on to other groups and new generations orally, making it difficult to retrieve once a language becomes extinct;

(c) Poverty is another threat to traditional knowledge. It is often the case that when people are poor, conservation is not a high priority, and they will take out of the environment whatever is needed for their survival;

(d) The misappropriation of indigenous knowledge in the form of biopiracy. As indigenous communities often inhabit areas with the highest biodiversity, they are coming under increasing pressure from biodiversity prospectors and corporations interested in privatizing and commercializing aspects of their biological knowledge.

C. The concept of transferable indigenous knowledge

48. The above-mentioned policy note of the indigenous knowledge workshop underlines the potential transferability of indigenous knowledge for the disaster risk reduction programme. It recognizes the following five thematic groups in which indigenous practices could be transferred to all communities living in similar contexts: mountain ecosystems; coastal zones; river basin management; water resource management; and housing.[11] Each of these areas of practice contains key characteristics and knowledge principles that may be transferable to other locations within the same geographic and climatic setting.

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potential to be applied to other regions and having time-tested reliability and it establishes a set of criteria for identifying transferable indigenous knowledge:

(a) Understandable to users;

(b) Implementable (usable, doable);

(c) Originating within communities, based on local needs, and specific to culture and context (environment and economy);

(d) Providing core knowledge with flexibility for local adaptation for implementation;

(e) Using local knowledge and skills, and materials based on local ecology;

(f) Proven to be time tested and useful in disasters;

(g) Applicable (or applied) in other communities or generations.

D. What has been done to date?

50. Since 2007, there have been a number of publications on the subject of the application of indigenous knowledge in disaster risk reduction efforts, several from the Asia-Pacific region. Much attention has been focused on the documentation and dissemination of indigenous knowledge in order to illustrate its value, including

(a) Advocate that international and national entities make resources available through coordination with local governments as a way of strengthening autonomy and capacities;

(b) Advocate that regional bodies and national Governments engage indigenous peoples and their communities in the formulation of disaster risk reduction policies, both to ensure cultural adaptation of mainstream strategies to better reach vulnerable communities and to empower those communities by taking advantage of their own knowledge and practices;

(c) Promote, at the regional and national levels, systematic research on and documentation of indigenous knowledge and practices for disaster risk reduction, studying the possibility of adapting successful practices to similar contexts;

(d) Work towards investing in disaster risk reduction in order to create resilience.

63. It is recommended that national policymakers:

(a) Understand and guarantee that civil society is seen as integral rather than external to local government, ensuring that disaster risk reduction planning at the local level is undertaken through participatory processes;

(b) Empower and guarantee that all members of civil society take ownership of the need to raise awareness surrounding the risks of disasters and work towards investing in disaster risk reduction in order to create resilience;

(c) Create a specialized working group for systematic research on and documentation of successful indigenous practices and knowledge to create a validated body of applicable knowledge;

(d) Incorporate the identification and use of successful indigenous knowledge and practices for disaster risk reduction, including non-formal means of dissemination, into official national disaster risk reduction policies and education plans;

64. It is recommended that indigenous community leaders:

(a) Take a leadership role in local level development and disaster resilience, and work with all stakeholders (locally and nationally);

(b) Work with city councils, municipal governments and others to promote budget increases aimed at assessing, capitalizing on and strengthening capacities for resilience at the local government level;

(c) Ensure that, at the community level, self-assessments of capacity and vulnerability are undertaken, with community participation, in order to identify new or recurrent hazards and successful past/present disaster risk reduction practices of local and/or external origin used to cope with them;

(d) Develop, through this process, integrated strategies that take advantage of both local knowledge and mainstream strategies that are better adapted to indigenous peoples' local concerns, capacities and resources of indigenous populations;

(e) Engage in dialogue with national and international institutions, platforms and frameworks to share knowledge and learn from the rapidly growing body of successful disaster risk reduction practice.